



AMAZING LIFE SCIENCE ACTIVITIES



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TABLE OF CONTENTS

Curious Life	4
Watch Seeds Sprout.	6
Staying Warm in the Arctic	8
A Frog's Trick to Surviving Winter	10
Eat Like a Bird	12
Cactus Survival.	16
The Changing Colors of Leaves.	18
Moldy Bread.	20
Glossary.	22
Read More.	23
Internet Sites.	23
Index	24

CURIOUS LIFE

Do you wonder about the plants and animals living in the world around you? Do you ask questions about life cycles? Can something be both living and nonliving? To find out the answers to questions like these, curious scientists do experiments.

Now it's your turn to be a curious scientist. Get ready to use your creativity and get a little messy! You will find out what it's like to eat like a bird and discover how frogs stay warm in cold weather. The results of your experiments will be amazing!

Safe Science

Read through each activity before starting. Collect all of the materials that you will need. You may need an adult to help you find or buy some materials. Experiments can be tricky. Be sure to ask an adult for help if you need it.



WATCH SEEDS SPROUT

Ever wonder what happens after you plant a seed in the ground? This experiment will show you what is going on underground! Watch seeds **germinate** before your eyes. Then see your plants grow each day.

Materials:

- water
- 1-2 paper towels
- Mason jar
- 2-3 seeds (sunflower, popcorn, peas, or beans)

Steps:

1. Dampen two to three paper towels. Ring out the paper towels so no excess water sits in the jar. Place the paper towels in the mason jar.
2. Place the seeds in the jar. Position them in different places inside the jar toward the outside so you can see them.
3. Place the jar near a window that gets plenty of sunlight.
4. Check back after a couple of days. What do you see?

Step 2



How it Works:

All seeds need moisture, clean air, and the right temperature to germinate. With the right conditions the plant inside starts to grow and get bigger. Moisture comes from the wet paper towels. The right temperature is created when the jar is placed near a window that gets sunlight. Clean air is also inside the jar. All the things needed for the seeds to germinate are inside the jar. It breaks out of the seed coat. Roots reach down, and a **shoot** grows up. After about five to six days, take your growing plants out and place them in dirt. Growing plants need the nutrients from soil and sunlight to survive.



germinate—when a seed sends out a root and a stem

shoot—the white stem growing out of a seed that becomes a plant

STAYING WARM IN THE ARCTIC

The Arctic is a **frigid** place on Earth. Many animals live on land and in the freezing water. Polar bears, whales, harp seals, and walrus are some animals that live in the Arctic. In this activity, you will discover how these animals stay warm in cold **climates**.

Materials:

- 4 plastic zip-top bags
- vegetable shortening
- spoon
- large bowl
- ice cubes
- water
- stopwatch
- paper and pencil

Steps:

1. Turn one of the zip-top bags inside out and place it in another bag. Line the zip-tops up so you can zip the bags together.
2. Using the spoon, put about $1\frac{1}{2}$ cups (285 grams) of shortening in between the two bags. Spread the shortening around to create a layer between the two bags. Zip the bags together.
3. Do the same thing with the other two zip-top bags, but don't add the shortening.
4. Fill a large bowl with ice cubes and water. It should be deep enough for your hands to be fully underwater.
5. Put your hand in the plain zip-top bag, and put it in the ice water. Use the stopwatch to time how long you can keep your hand in before it gets too cold.

Step 1



6. Remove your hands when you get uncomfortable. Stop your stopwatch, and write down the time.
7. Now put the same hand in the zip-top bag with the layer of shortening. Put it in the ice water. Use the stopwatch again to time how long you can keep it in the water. Record your results.
8. Look at your data. Were you able to keep your hand in the ice water longer using the zip-top bag with the layer of shortening? What was the time difference?

How it Works:

Animals living in cold places develop several **adaptations** to live in their climate. One adaptation is to develop a layer of fat under the skin called blubber. The fat keeps the animal's body insulated in cold climates. Shortening is a type of fat. When you added shortening to the zip-top bags, you protected your hand from the cold. Therefore, you were able to keep your hand in cold water for a longer time.



frigid—very cold in temperature

climate—the usual weather that occurs in a place

adaptation—a change a living thing goes through to better fit in with its environment